REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 12, 13, 15-16, 20, 22, and 25-27 are pending. Claims 17-18 are canceled by this reply, without prejudice or disclaimer. Claims 12, 20, 22, and 27 are independent. The remaining claims depend, directly or indirectly, from claims 12, 20, 22, and 27.

Examiner Interview

Applicants thank the Examiner for courtesies extended during the in-person Examiner Interview conducted on May 6, 2010. During the Examiner Interview, Applicants discussed proposed amendments to the claims and the Dwyer reference. No agreement was reached. Applicants have made amendments consistent with those discussed during the Examiner Interview, and encourage the Examiner to contact the Applicants should further clarification or additional information be required.

Claim Amendments

The independent claims are amended for purposes of clarification. No new matter is added by way of these amendments, as support may be found, for example, at least in paragraphs [0025] and [0027] and in Figures 3-4 of the Publication of the present application.

Rejection(s) under 35 U.S.C. § 103

Claims 12-13, 15-18, and 20

Claims 12-13, 15-18, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pub. No. 2004/0015748 ("Dwyer") in view of US Pub. No. 2003/0103564 ("Hanaki"). Claims 17-18 are canceled; thus, this rejection is now moot with respect to the canceled claims. For the following reasons, this rejection is respectfully traversed.

MPEP § 2143 states that "[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit." Further, when combining prior art elements, the Examiner "must articulate the following: (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference...." MPEP § 2143(A).

Amended independent claims 12 and 20 require, in part (i) that the first and second code portions be marked or bounded by a first entry point and first instruction that creates a break in the flow of execution, which is the ending point of the code portion; (ii) that the pre-calculated checksum be passed as a *parameter to the first instruction* that creates a branch in the flow of execution and ends the current code portion being verified; and (iii) that the pre-calculated checksum *is compared* to the current calculated checksum *during execution of the ending instruction* that creates a branch in the flow of execution of the code portion. Thus, the amended claims provide additional structure to define each code portion, and require a specific instruction

(*i.e.,* the ending instruction that creates a branch in the flow of execution of the current code portion) that is executed during the comparison step performed for verification.

Dwyer relates to run-time checking of software code. Dwyer discloses first checking the CRC of a block, and then only (if the check is successful), executes the block. *See* Dwyer, paragraph [0009]. That is, in Dwyer the CRC is checked first (in order to check whether the software is invalid) and only then can the execution proceed, if the software is found not to be invalid based on CRC check.

Turning to the rejection, in contrast to the claimed invention, Dwyer fails to disclose or render obvious the structure of each code portion as claimed in the amended independent claims. In fact, the code blocks of Dwyer are not disclosed as being bounded by any particular type of instructions, nor does Dwyer disclose an entry point and an ending point of each code block, where the ending point of a code block is an instruction that creates a branch in the flow of execution of the program. Rather, Dwyer merely refers to a checksum verification process for each function within a program (*see* Dwyer, paragraph [0022]. While a program is typically made up of one or more functions that execute, Dwyer fails to provide that each code block or function is bounded by specific instructions (*e.g.,* a branch instruction) as required by the claimed invention. Accordingly, Dwyer fails to disclose or render obvious (i) above.

It logically follows from the above that Dwyer cannot possibly disclose or render obvious passing the pre-calculated checksum as a parameter to one of the instructions that binds a code portion, as required by (ii) above. More specifically, Dwyer is silent with respect to passing the pre-calculated checksum value as a parameter to any instruction. Instead, Dwyer merely discloses that a special function is called to create space in memory to store the pre-calculated checksum. *See*

Dwyer, paragraph [0021]. Further, it also follows that Dwyer does not disclose or render obvious that the pre-calculated checksum is compared to the checksum calculated during the execution of the ending instruction that bounds the current code portion. That is, Dwyer fails to contemplate performing the comparison of the two checksums for verification during the execution of the ending instruction of the code block, because Dwyer does not specifically disclose that a code block comes to an end when an instruction that creates a branch in execution flow is reached, in the manner required by (iii) above.

With respect to Hanaki, Hanaki fail to supply that which Dwyer lacks. Specifically, Hanaki merely discloses that a second code block remains unexecuted with an anomaly is detected in the verification process of a first code block that precedes the second code block. *See* Hanaki, paragraphs 0231, 0248, 0255. Hanaki fails to disclose or render obvious the limitations required by (i) – (iii) above.

In view of the above, it is clear that the Examiner's contentions fail to support an obviousness rejection of amended independent claims 12 and 20. Pending dependent claims are patentable for at least the same reasons. Withdrawal of this rejection is respectfully requested.

Claims 22 and 25-27

Claims 22 and 25-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dwyer in view of US Patent No. 5,586,321 ("Shavit"). To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

As described above, Dwyer fails to disclose or render obvious the limitations required by independent claims 12 and 20. Further, independent claims 22 and 27 include similar subject matter as amended claims 12 and 20, as applied to a <u>pre-calculated counter value</u> instead of a pre-

calculated checksum.   That is, amended independent claims 22 and 27 recite each of the same limitations required by (i) – (iii) above, but use a counter value to perform verification of each code portion rather than a checksum value. Accordingly, amended claims 22 and 27 are patentable over Dwyer for at least the same reasons described above with respect to claims 12 and 20.

Further, Shavit fails to supply that which Dwyer lacks. In fact, Shavit is not even related to software code verification. Shavit is only focused on a diffracting token router, which is a hardware device that is involved with token collisions and routing of tokens to output wires (*see* Shavit, Abstract), and is used by the Examiner as disclosing counter values. Given Shavit's area of technology, it is impossible for Shavit to disclose or render obvious the limitations required by (i) – (iii) above, as the limitations are directly focused on software code verification, and require specific software implementations such as passing parameter values to branch instructions and performing a comparison of counter values during execution of a branch instruction. The cited portion of Shavit merely discloses a shared counter that is used as an application of the diffracting token router. The shared counter disclosed in Shavit is not, in any way, used to balance counter values when one or another branch is taken in first code segment, as required by independent claims 25 and 27.

In view of the above, it is clear that independent claims 22 and 27 are patentable over Dwyer and Shavit, whether considered separately or in combination. Pending dependent claims are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 09669/087001).

Dated: June 29, 2010   Respectfully submitted,

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